

Proposed Amendment to the Specification

On Page 1, please amend the first paragraph to read as follows:

This application claims the benefit of an earlier filing date of previously filed U.S. Provisional Patent Application 60/422,476 (filed Oct. 31, 2002). Additionally, this application is ~~related~~ a continuation-in-part of ~~to~~-commonly owned and co pending U.S. Patent Application No. #####,### 10/686,829 (filed on Oct. 15, 2003), which is a non-provisional application of; U.S. Provisional Patent Application No. 60/418,187 (filed Oct. 15, 2002)), U.S. Patent Application No. 09/988,219 (filed Nov. 19, 2001) and U.S. Patent Application No. 10/294,834 (filed Nov. 15, 2002). Each of the above disclosures is hereby incorporated by reference.

On Page 4, please rewrite the second paragraph as follows:

Typically, rake receiver fingers are assigned to the strongest line-of-sight (“LOS”) or multipath signals in order to provide an improved estimate of transmitted signals. As electromagnetic characteristics of a channel change, the relative powers of the received multipath signals typically change ~~in terms of power relative to one another other~~. The changes in the channel characteristics can be caused by phenomena such as Rayleigh fading, shadow fading, scattering, diffraction and/or others. The rake receiver fingers combine the strongest set of multipath signals to improve phase estimates and amplitude estimates, among others, of the transmitted signal. As signals change due to such phenomena, fingers are assigned and de-assigned accordingly such that the rake receiver signal set can more accurately demodulate the transmitted signals.

On Page 4, please rewrite the last paragraph as follows:

While typical rake receivers are useful in countering the effects of multipath and in fact use multipath to improve signal quality, interference suppression is still an important aspect in the improvement of signal quality. One prior art rake receiver, described in U.S. Patent No. 6,175,587 (issued Jan. 16, 2001; the “‘587 patent”) employs a control device having an interference suppression feature. This interference suppression feature generates a matrix derived from codes of other CDMA signals within a cellular telephony system and uses that matrix to suppress unwanted received signals. However, the interference suppression feature of the ‘587 patent is inherently inaccurate due to a zero-padding within the matrix generation. This zero-padding alters the direction of the subspace projection and inaccurately suppresses energies of those unwanted received signals. CDMA codes define a code space where all signals can be described as a linear combination of these codes. A subspace projection is a mathematical operation that projects a signal in the code space onto a lower dimensional subspace. As such, the cancellation operation of the ‘587 patent may degrade signal quality of the desired signal and lead to corruption of the desired signal.

Summary

On Page 5, please rewrite the first paragraph as follows:

Summary

The present invention provides a processing engine that ~~which~~ may be used in a communications receiver. The processing engine substantially reduces interference caused by unwanted signals by mathematically reducing the energy of the signals. In one embodiment, the signals have known CDMA coding schemes. The signals are selectively substantially cancelled using a matrix generated, at least in part, from determined CDMA codes. For example, a receiver of one embodiment includes a demodulator unit for determining a code from each of a plurality of signals and for demodulating one or more of the plurality of signals. The processing engine is communicatively coupled to the demodulator unit and configured for generating a matrix of one or more vectors based on determined codes. Each element of the vectors comprises a component of the determined codes and the matrix itself is used to selectively substantially reduce energy from one or more of the signals.